

# IV

## FURTHER EXPERIENCES WITH CITRAGAN IN THE TREATMENT OF GONORRHŒA

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IN a former article (*Br. Journ. of Ven. Dis.*, Vol. IV., 1928, p. 199) I set forth some points of view in the treatment of gonorrhœa in males which were based on certain physico-chemical and physiological considerations of the mechanism of the therapeutic effect of anti-microbial compounds on the mucous membrane. It was shown that the silver-protein preparations were, for many reasons, not to be considered as so highly superior in penetrating power and anti-microbial effect as is generally supposed, and that their effect from the physiological point of view was illogical. For the principles of the treatment with a new compound, Citragan :  $C_{228}H_{227}O_{266}Na_{76}Ag$  (and not as indicated in the former article (p. 201),  $C_{240}H_{278}O_{280}Na_{40}Ag$ —this difference is owing to an alteration made in the hydrogen-ion concentration). I must refer readers to that article, and in these pages shall report only my therapeutic results in a series of cases which were obtained with the combined use of Citragan injections and of the gelatinous, absolutely fat-free, soluble and absorbable styli Citragani which have the high silver-content of 1.27 mgrm. per cubic centimetre. The treatment has been by injections for ten minutes and thereafter insertion of a moistened stylus into the urethra about five times a day. The results are shown in Table I.

TABLE I.

No.	Number of previous attacks.	Date of commencement of treatment.	Date when free from gonococci.	Relapses during treatment.	Relapses after suspension of treatment.	Duration of treatment in days.
I	2	29/5	?	0	0	11
2	2	29/3	10/4	0	0	34
3	3	4/5	5/5	0	0	4
4	I	19/3	28/3	0	0	21
5	I	27/3	30/3	0	0	33
6	0	28/3	16/4	0	0	48
7	0	4/4	18/4	0	0	33
8	0	17/4	27/4	0	0	24
9	I	17/4	20/4	0	0	28
10	0	23/4	2/5	0	+	47
11	0	24/4	15/5	0	0	35



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No.	Number of previous attacks.	Date of commencement of treatment.	Date when free from gonococci.	Relapses during treatment.	Relapses after suspension of treatment.	Duration of treatment in days.
12	0	24/4	2/5	0	0	17
13	0	24/4	2/5	0	0	19
14	3	1/5	7/5	0	0	25
15	2	22/5	29/5	0	0	27
16	2	22/5	12/6	0	0	28
17	0	22/7	27/7	0	+	57
18	2	25/4	27/4	+	+	71
19	2	3/7	?	0	0	14
20	2	3/7	10/7	0	0	14
21	1	9/5	20/6	0	+	66
22	0	1/6	11/6	0	+	48
23	2	11/7	16/7	0	0	12
24	1	13/7	16/7	0	0	17
25	1	26/6	3/7	0	0	32
26	0	27/6	20/7	0	+	38
27	0	9/7	16/7	0	0	24
28	0	13/6	2/7	0	0	38
29	1	10/7	13/7	+	0	26
30	0	13/6	2/7	0	0	38
31	0	29/5	4/6	+	+	68
32	0	27/7	30/7	0	0	24
33	1	7/8	10/8	0	0	21
34	3	30/4	11/5	+	0	120
35	1	25/5	30/5	+	+	85
36	1	14/8	20/8	0	0	23
37	1	6/8	10/8	+	0	34
38	2	24/8	27/8	0	0	23
39	2	23/7	27/7	0	0	30
40	0	8/8	4/9	0	0	40
41	1	27/8	31/8	0	0	19
42	2	14/8	21/8	0	0	25
43	3	4/9	11/9	0	0	14
44	2	29/8	3/9	0	0	24
45	1	3/9	12/9	0	0	23
46	1	1/8	8/8	+	0	52
47	0	17/8	3/9	0	0	34
48	1	11/9	18/9	0	0	18
49	0	14/9	18/9	0	0	18
50	2	10/9	28/9	0	0	24
51	0	9/5	11/5	+	+	120
52	2	7/9	14/9	0	0	23
53	1	14/8	27/8	0	+	48
54	1	5/9	12/9	0	0	23
55	1	14/9	18/9	0	0	22
56	1	19/6	26/6	+	+	90
57	1	3/10	5/10	0	0	9
58	1	15/6	18/6	+	+	100
59	4	25/9	2/10	0	0	19
60	2	7/9	10/9	+	0	43



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Complications were observed in the following cases :—

Urethritis posterior in Nos. 18, 22, 34, 35, and 46.

Epididymitis (during treatment) in Nos. 17 and 35.

Epididymitis (at commencement of treatment) in Nos. 2 and 49.

Paraurethritis in case No. 1.

Prostatitis (with clinical symptoms), *nil*.

I may remark here that, in cases of complications, I generally stop the injections but continue the treatment with styli, and when the patient arrives with, *e.g.* epididymitis, I begin the stylus treatment immediately. I have never seen any inconvenience from this proceeding.

The duration of treatment of these sixty cases grouped in periods of ten days is shown in Table II.

TABLE II.

1-10 days.	11-20 days.	21-30 days.	31-40 days.	41-50 days.	51-60 days.	61-70 days.	71-80 days.	81-90 days.	91-100 days.	100 days.
3·3 per cent.	19·0 per cent.	33·0 per cent.	18·3 per cent.	8·3 per cent.	3·3 per cent.	3·3 per cent.	1·6 per cent.	1·6 per cent.	3·3 per cent.	4·9 per cent.

That is to say, that in thirty days or less 55·3 per cent. were cured ; in thirty-one to sixty days 29·9 per cent. ; in more than 100 days only 4·9 per cent. The long duration of some cases (*e.g.*, No. 18) is certainly to be explained by the posterior urethritis. But in other cases (*e.g.*, Nos. 21, 31 and 34) no real reason could be found for the delay in recovery. Special anatomical or physiological circumstances can be imagined as the cause in some cases ; also where a treatment—as in male gonorrhœa—has to be carried out by the patient himself you have, of course, to reckon with differences in the patient's skill in manipulation, which can influence the results of the treatment.

The discharge generally stopped early in the treatment, but I don't attach so much importance to the degree of the discharge, as I find cases where it continues after the disappearance of the gonococci, while in others the gonococci may be present with little or no discharge. For me the microscopical examination for gonococci has always been the most important test. I tested all the cases microscopically for three weeks after suspension of treat-



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ment, and think that relapses after this term are very rare.

As for the treatment of posterior cases, I have had no opportunity of treating these specially with the Janet irrigations, so in those the treatment has been the same as in anterior cases. I think the duration in at least some of them could have been shorter by irrigations with Citragan, and I hope to be able to make a trial of this method later.

Almost all the patients supported the treatment quite well and only very few complained of pain. In one or two the treatment had to be stopped on account of bleeding.

I think that, on the whole, my further experience with Citragan has confirmed the opinion I expressed in my former article, that it has given really better results than does silver-protein and the flavine compounds. Citragan treatment is, moreover, in accordance with the physiological and biochemical processes of the inflammation in gonococcal infection of the urethra.